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Laura M. Locke

Cynthia Louise Grissman

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Gisele Nicole Bazan

Kari Love

See next page for additional authors

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Authors

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Catheter-Associated Urinary Tract Infection (CAUTI) Prevention Strategy Using Education in an Intensive Care Unit (ICU)

Laura M. Locke, BSN, RN; Cynthia Louise Grissman, BSN, RN; Rita Denise Crasta, MSN, RN, OCN, BMTCN;
Gisele Nicole Bazan, BSN, RN; Kari Love, BS, RN, MSHS, CIC, FAPIC; Cindy Ford, PhD, RN, CNE; Jamie K. Roney,
DNP, RN-BC, CCRN-K; JoAnn D. Long, PhD, MA, RN, NEA-BC

Introduction

Purpose To measure clinical impact of an evidence-based educational strategy on urinary tract infection (UTI) rates in a 900+ bed acute care facility located in a southwestern state in the United States (US).

Clinical Question Will a focus on staff education in the ICU on proper placement techniques, care, and early removal of urinary retention catheters reduce incidences of CAUTIs in an ICU setting?

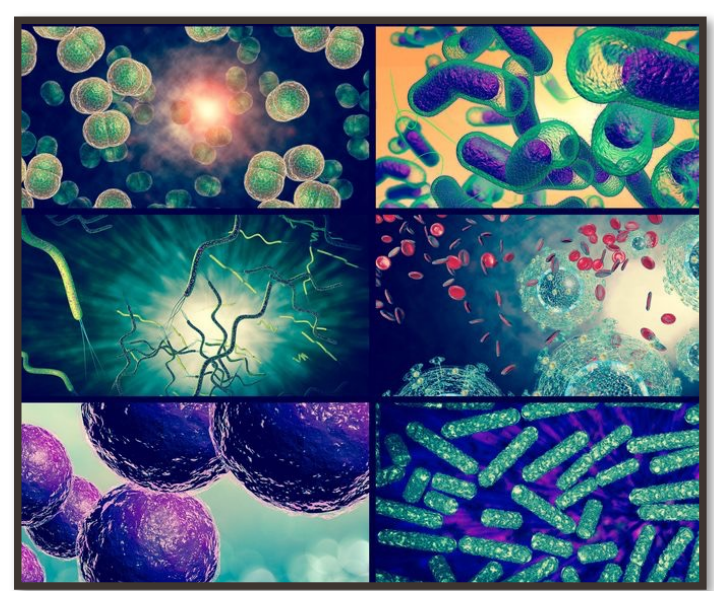
Background

Clinical Significance

- Hospital-acquired infections (HAIs) from indwelling urinary catheters are associated with increased morbidity, length of stay, and healthcare costs (WHO, 2016)
- UTIs make up roughly 40% of all HAIs during hospitalization with 80% being associated with use of urinary retention catheters (IHI, 2017; Quinn, 2015)
- HAIs from indwelling urinary catheters are associated with more than 113,000 deaths annually in the US (Ternavasio-de la Vega et al., 2016)

Literature Review

- 301-bed non-academic hospital demonstrated 50% reduction in CAUTIs one year after introducing a nurse-driven process designed to daily question the need for a urinary catheter through use of nursing assessment and targeted clinician education (Quinn, 2015)
- CAUTIs rose 3% from 2009 to 2012 in the US (Knudson, 2014)
- Data from 1,653 ICUs found that CAUTI prevention strategies were followed 27-67% of the time, thus informing the need for implementation and adherence measures for CAUTI prevention in this ICU (Knudson, 2014)



(Adobe Systems Incorporated, 2017)



(Adobe Systems Incorporated, 2017)



(Adobe Systems Incorporated, 2017)

Methods

Design Descriptive study design

Setting CICU selected by infection prevention CAUTI team

Interventions Staff education focused on urinary catheter insertion using low fidelity simulation in December 2015.

Evidence-based educational program focused on:

- reduction of urinary catheters used
- implementation of insertion and maintenance best practices
- timely nursing assessment for need for removal

Sample Sampling at unit level included 100% of CICU staff nurses (N = 76)

Protocol Periodic rounding in CICU by infection prevention CAUTI team members to assess 100% of patients with indwelling urinary catheters.

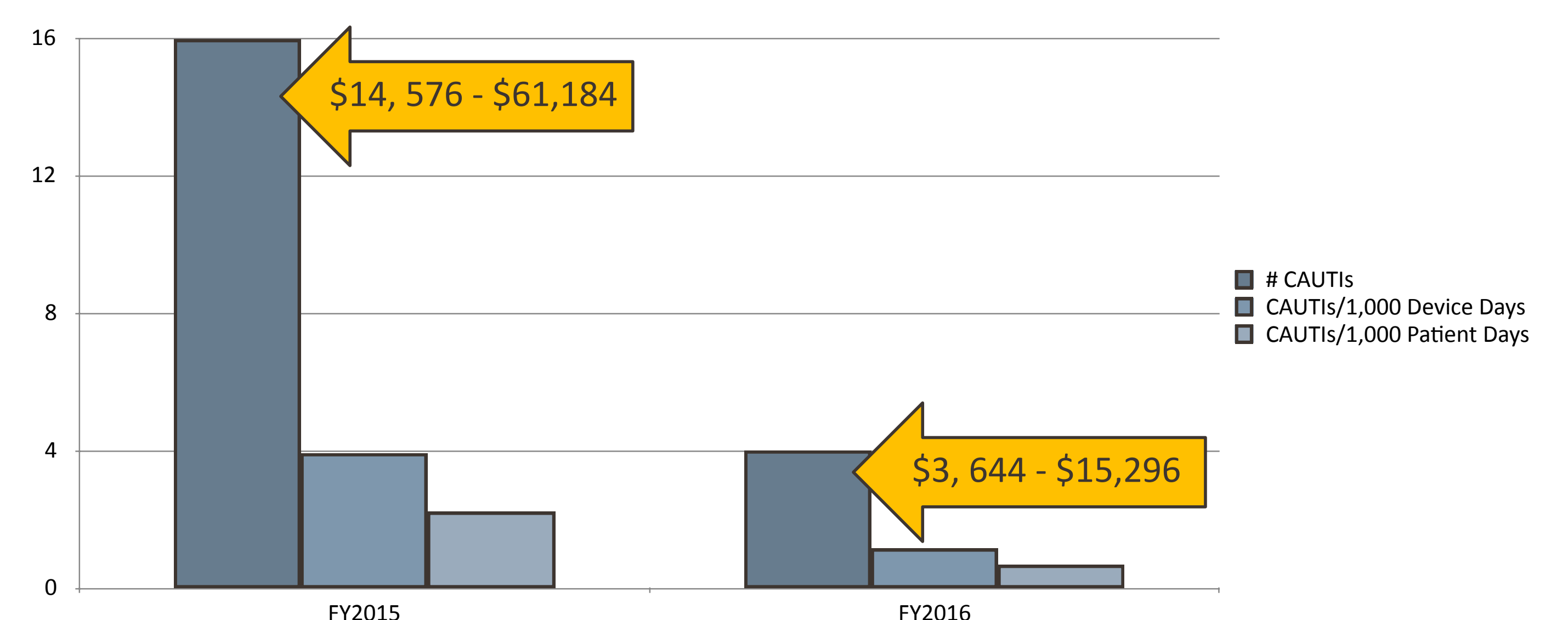
- ✓ checked for daily care compliance
- ✓ nurse assessment for necessity of continued urinary catheter placement
- ✓ proper urinary catheter securement devices in use
- ✓ appropriate positioning of closed drainage units

“Just in time” coaching and recognition was provided as needed.

Results

- Catheter induced infection rates decreased from 16 to 4 after intervention
- Cost estimates based on patients with symptomatic urinary tract infection (SUTI) and blood stream infection (BSI)
- Used per-patient inpatient cost estimates of SUTI (\$911) & BSI (\$3,824) respectively (Kennedy et al., 2013)

	Number of CAUTIs	CAUTIs per 1,000 Device Days	CAUTIs per 1,000 Patient Days
FY2015	16	3.91	2.22
FY2016	4	1.15	0.69



Discussion

- Regular use of urinary retention catheters in ICU settings worldwide place patients at increased risk for developing CAUTIs
- An infection prevention CAUTI team aided in increasing staff education and awareness of nurse-led prevention strategies
- Partnering with experts outside nursing units improved teamwork and communication across disciplines regarding care and use of retention catheters
- Incidence of improper care was reduced significantly with periodic rounding
- Evidence-based protocols designed to decrease CAUTIs may not capture point of care practices contributing to problem
- Collaboration with experts outside of the nursing unit decreased CAUTIs
- Our study findings were consistent with literature findings
- Project findings led to implementation across all medical-surgical and progressive care units in this institution

Nurse-driven strategies
for
**CAUTI
PREVENTION**



Conclusions

- With targeted evidence-based education for the nursing staff and routine rounding by infection prevention CAUTI team members, a reduction in CAUTIs have resulted in this ICU setting.
- Further research is recommended to fully demonstrate the impact of targeted evidence-based clinician education and nurse-led protocols on CAUTI rates in CICU settings.

Contact

Rita Crasta, MSN, RN, OCN, BMTCN
Covenant Health, Lubbock, Texas, United States
Email address: rcrasta@covhs.org
Phone number: (806)725-0678

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